

AMENDMENTS TO THE CLAIMS:

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This listing of claims will replace all prior versions,
and listings, of claims in the application:

7-31-07

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LISTING OF CLAIMS:

1. (currently amended) Piezoactuator (1) comprising
 - at least one stacked piezoelement (2), with at least two electrode layers (7, 8, 9), arranged one over the other along a stacking direction (10) of the piezoelement (2), and at least one piezoelectric layer (4), arranged between two electrode layers (7, 8, 9), and
 - at least one pretensioning device (15) for introduction of force (32) into a volume of the piezoelectric layer (4) by means of at least one force introduction surface (13, 14, 23, 24) on the piezoelectric layer (4), which is arranged on at least one of the surface sections (11, 12) of the piezoelectric layer (4) so that it faces the pretensioning device (15),

wherein

the force introduction surface (13, 14, 23, 24) is smaller than the surface section (11, 12) of the piezoelectric layer (4) and that the volume is a partial volume (5) of the piezoelectric layer (4);

- wherein a thickness (6) selected for the piezoelectric layer (4) is in the range 20 μm to 200 μm inclusive; and

2. wherein an extent of the force introduction surface (13, 14, 23, 24) virtually corresponds to the thickness (6) of the piezoelectric layer (4).

2. (previously presented) Piezoactuator according to Claim 1, wherein a plurality of force introduction surfaces (13, 14) are distributed over the piezoelectric layer (4) in such a way that the introduction of force causes a bending of the piezoelectric layer (4).

3. (previously presented) Piezoactuator according to Claim 1 wherein the piezoelectric layer (4) comprises a surface section (11) having at least one force introduction surface (13), and a further surface section (12) facing away from the surface section (11) and having at least one further force introduction surface (14), and in which the force introduction surfaces (13, 14) are laterally offset from one another relative to the stacking direction (10) of the piezoelement (2).

4. (previously presented) Piezoactuator according to claim 1, wherein at least one of the designs chosen for the pretensioning device (15) and/or piezoelement (2) for generating the force introduction surface (13, 14, 23, 24) takes the form of a spherical cup (18), frustum of a cone (19, 29), cuboid (30, 31), ring (17) and/or cylinder (21, 22).

5. (previously presented) Piezoactuator according to claim 1, wherein the force introduction surface (23) is pointlike.

6. (previously presented) Piezoactuator according to claim 1, wherein the force introduction surface (24, 24') is stripe-shaped.

7. (previously presented) Piezoactuator according to claim 1, wherein the force introduction surface (23') is ring-shaped.

8. (previously presented) Piezoactuator according to claim 1, wherein there are at least three force introduction surfaces, evenly distributed over the surface section (11, 12) of the piezoelectric layer (4).

9. (previously presented) Piezoactuator according to claim 1, wherein there are at least three force introduction surfaces, arranged in a row (25) on the surface section (11, 12) of the piezoelectric layer (4).

10. (previously presented) Piezoactuator according to claim 1, wherein surface sections (11, 12) of the piezoelectric layer (4) which face away from one another have identical and/or differently shaped force introduction surfaces (13, 14, 23, 24) arranged along the stacking direction (10) and offset from one another.

11-12. (canceled)

13. (previously presented) Piezoactuator according to claim 1, wherein a plurality of piezoelements (2) are stacked one over the other.

14. (previously presented) Piezoactuator according to Claim 13,

wherein at least two piezoelements (2) are stacked over one another in such a way that force introduction surfaces (13, 14, 23, 24) of the piezoelements (2) are arranged more or less flush one over the other.

15. (previously presented) Method for producing a piezoactuator (2) according to claim 1 by introducing a force (32) into a partial volume (5) of the piezoelectric layer (4) via the force introduction surface (13, 14, 23, 24) of the piezoelectric layer (4) in such a way that, in the partial volume (5) of the piezoelectric layer, a polarization (27) is generated transverse to the stacking direction (10).

16. (previously presented) Method according to Claim 15, wherein a partial volume (5) extending along an entire thickness (6) of the piezoelectric layer (4) is used.

17. (previously presented) Method according to Claim 15, wherein virtually complete polarization transverse to the

stacking direction (10) is generated in the partial volume (5).

18. (previously presented) Method according to Claim 16, wherein virtually complete polarization transverse to the stacking direction (10) is generated in the partial volume (5).

19. (previously presented) Piezoactuator according to claim 1, there being force introduction surfaces (13, 14, 23, 24) on opposite sides of the piezoelectric layer (4), which surfaces are smaller than the surface section (11, 12) of the piezoelectric layer (4).

20. (previously presented) Piezoelectric actuator according to claim 19, there being a plurality of said force introduction surfaces (13, 14, 23, 24) spaced apart on each side of the piezoelectric layer (4) and all smaller than the surface section (11, 12) of the piezoelectric layer (4), there being a plurality of said partial volumes (5) spaced apart within the piezoelectric layer (4).